

SPECTRUM

THE FUNDAMENTAL ELEMENT OF MOBILE

WRC-19 | 31 October

ASMG





Introduction



**Opening
Remarks**

Mats Granryd
Director General
GSMA

John Giusti
Chief Regulatory Officer
GSMA

GSMA

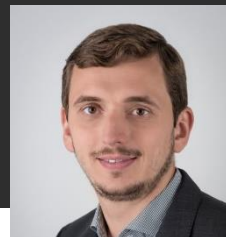


GSA

Noel Kirkaldy
Market Development MEA
Nokia

Geraldo Neto
Senior Technical and
Policy Advisor
TMG

**Analyst
Industry**



**Closing
Remarks**

Mohamed Abbes
Public Policy Director
GSMA

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Opening Remarks

Mats Granryd





Welcome

John Giusti

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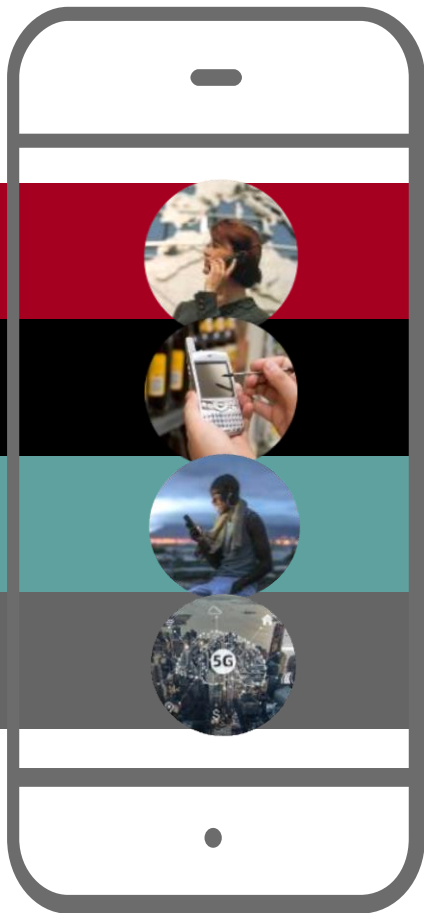


2G

3G

4G

5G



All about calls and texts

The start of mobile data

The arrival of mobile broadband services and applications

The network adapts to the application

Ultra high speed
Ultra low latency
New applications



5G Ramps Up



01

LG Uplus is seeing 1.3 gigabytes of data a day per subscriber in the early days of its 5G launch



Early 5G data usage has tripled, according to SK Telecom, in comparison with 4G

02



03

In Saudi, 1820 TB of data, a 66% increase in daily consumption, were consumed over Hajj in Mecca using networks including 37 5G sites



5G connections
forecast has
increased by

12.5%

It now stands at



1.6 BILLION

by 2025



5G adoption forecast
has increased to



18%

by 2025



37

COMMERCIAL 5G NETWORKS

launched across

19

MARKETS



with

75

further
launches



across

50

markets
soon



ROUTERS



DRONES

129

5G DEVICES

TVs



ROBOTS



HOTSPOTS



2018

Mobile operators will invest

\$480BN

WORLDWIDE

2020

in mobile capex



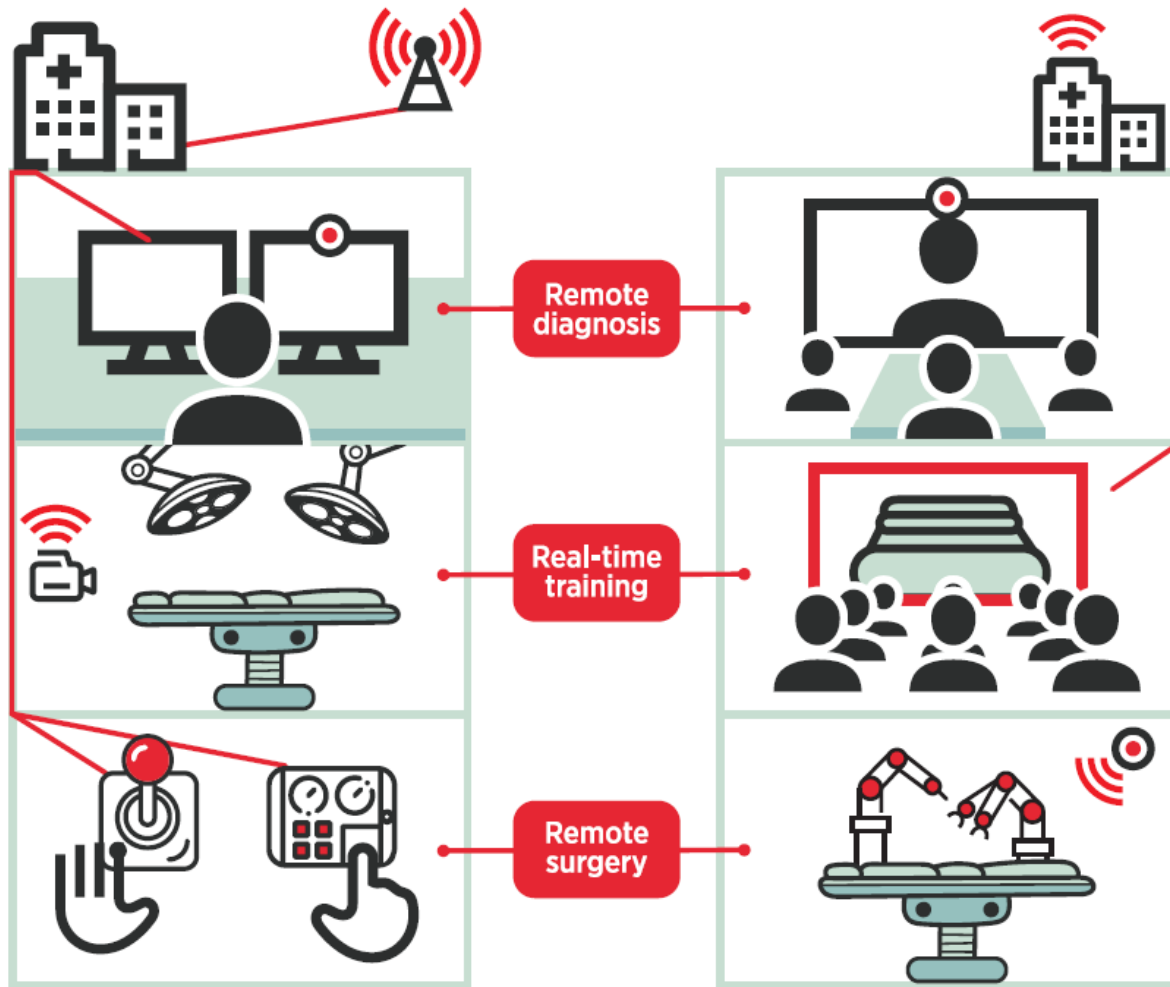


Use Case

5G

CAN
MAKE IT
HAPPEN

Healthcare





The socio-economic benefits of mmWave 5G (2020-2034)

Middle East and North Africa Edition

GDP impact of mmWave spectrum by 2034



\$15.4 billion

TAX
\$3.1bn

1.1 %

GDP growth

15%
2025

27%
2034

The share of 5G services using mmWaves



5G Ecosystem

Noel Kirkaldy

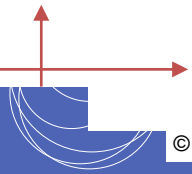
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5G ECOSYSTEM UPDATE

Noel Kirkaldy
GSA Arab States



Qualcomm



HUAWEI

NOKIA



SAMSUNG

VISION



VISION

wirelessly connect almost all 7 billion people globally to new and exciting services through 100 billion devices and things, by 2030



HOW

spectrum from the low-band, mid-band and high-band frequency ranges helps realise the Vision

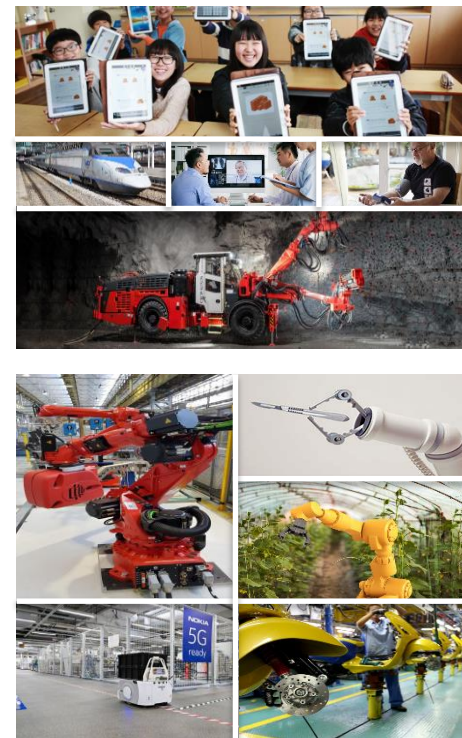
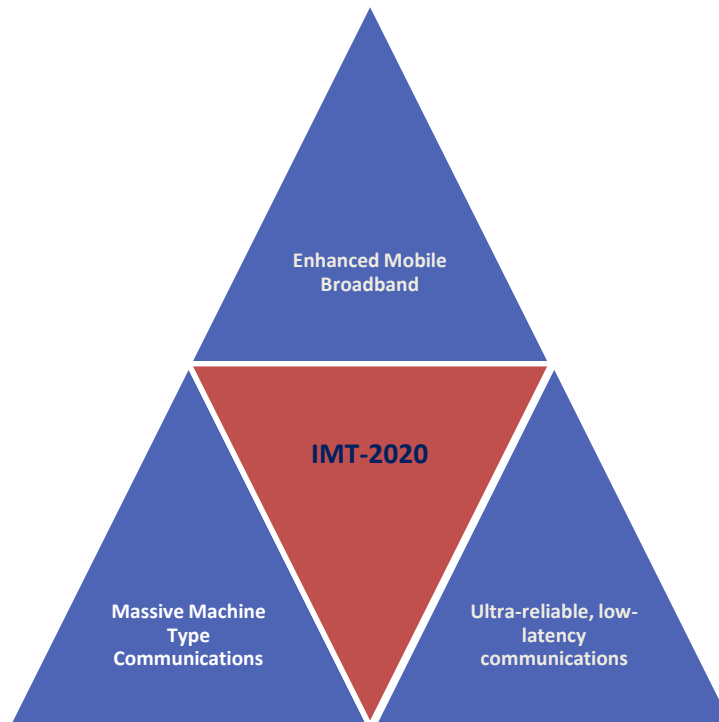
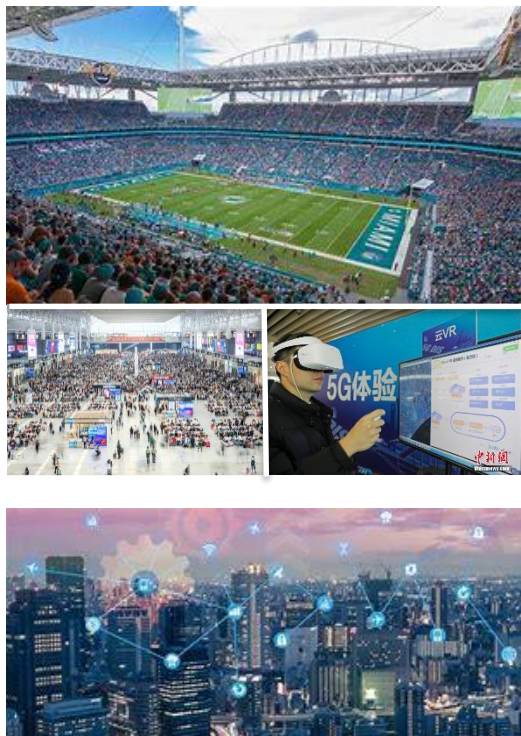


WRC-19 GOAL

large contiguous amounts of high band (mmWave) harmonised spectrum, with suitable regulatory conditions, helps enable extreme capacity and ultra fast local area services.

planning for the future with WRC-23 mid & low band agenda item

USE CASES





Release 15 complete (2017-2019)

Release 16 development (2018-2020)

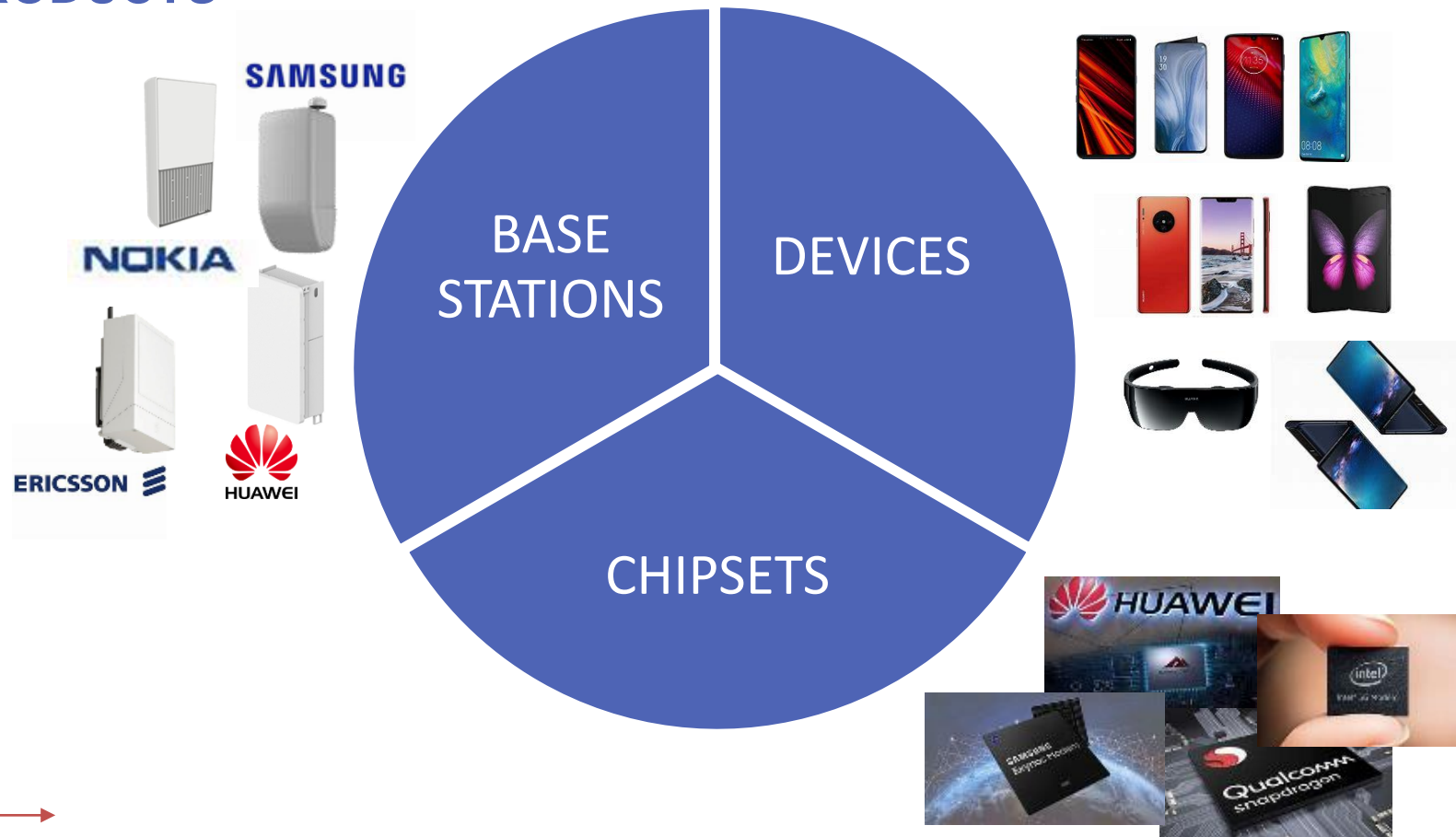
Enhancements, Unlicensed, URLLC+ & IoT+, V2X, etc

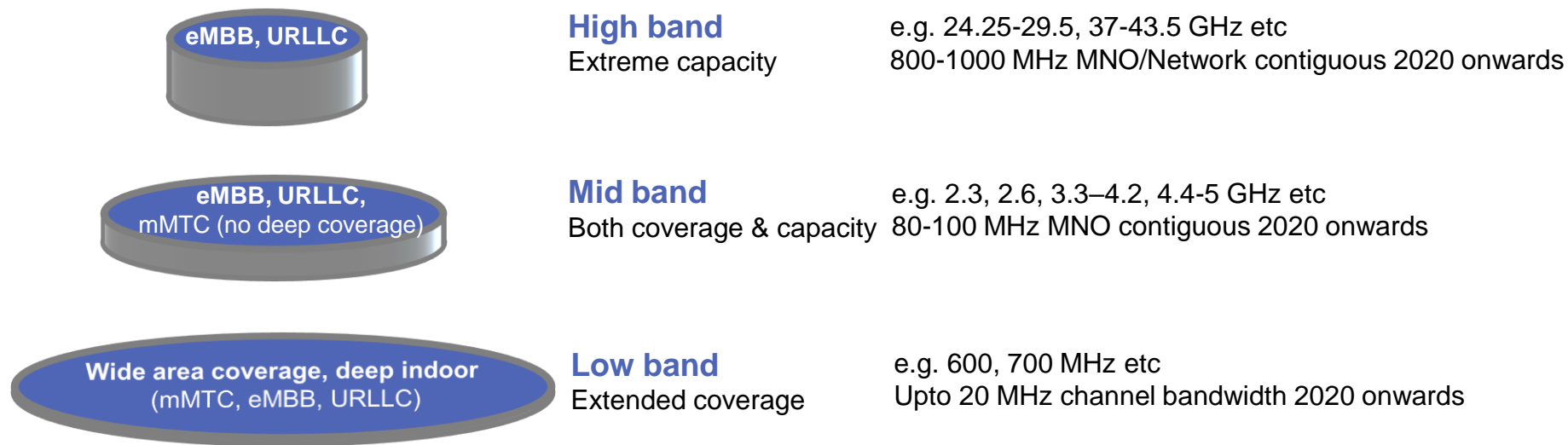
Release 17 planning (2019-2021)

Enhancements to support verticals, coverage improvements, NTN, etc

3GPP 5G specs complete – work underway on enhancements

PRODUCTS





Various applications and services require access to spectrum from low, mid and high bands

The Road to 5G with GSA

The Industry Voice of the Global Mobile Ecosystem

Facts - Figures - Graphs - Reports - Market Monitoring - Analysis - Advocacy - Databases... [Read More >](#)

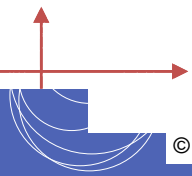
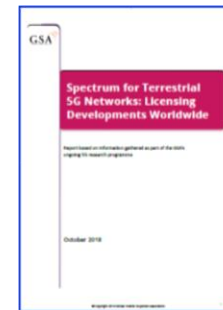
THANK YOU

Check out www.gsacom.com for regular report updates

5G ecosystem update



5G licensing update



Qualcomm



NOKIA



SAMSUNG

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Industry Perspective

Geraldo Neto



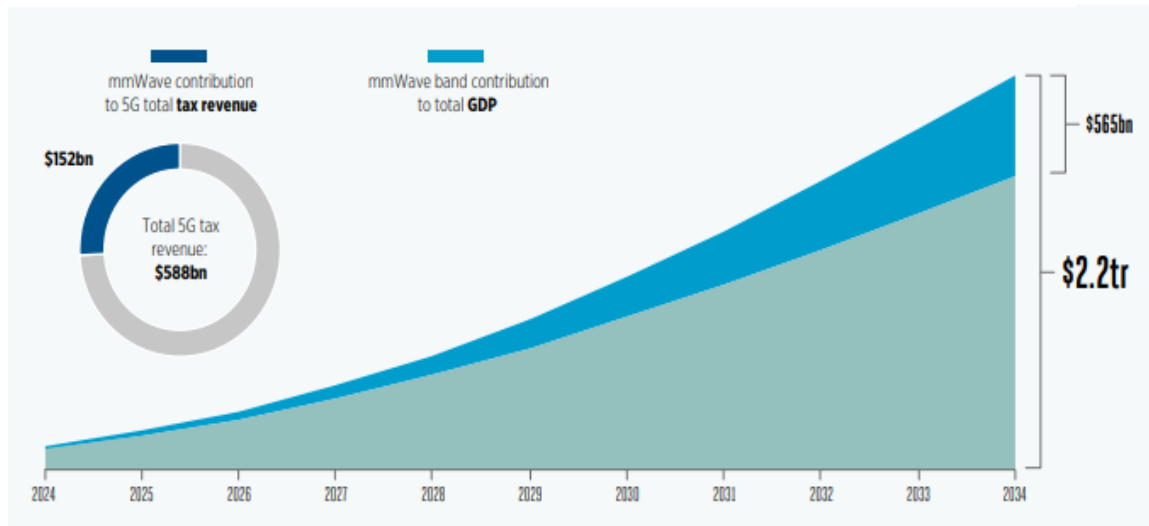
Industry Perspective

October 2019

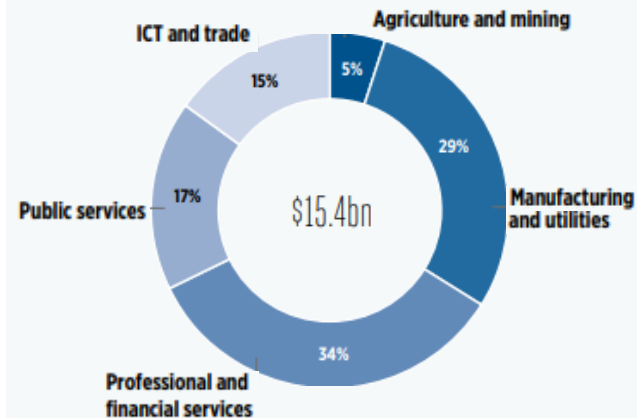
5G is expected to contribute \$2.2 trillion to global GDP

STRUCTURE OF GDP CONTRIBUTIONS BY VERTICAL IN MENA, 2034

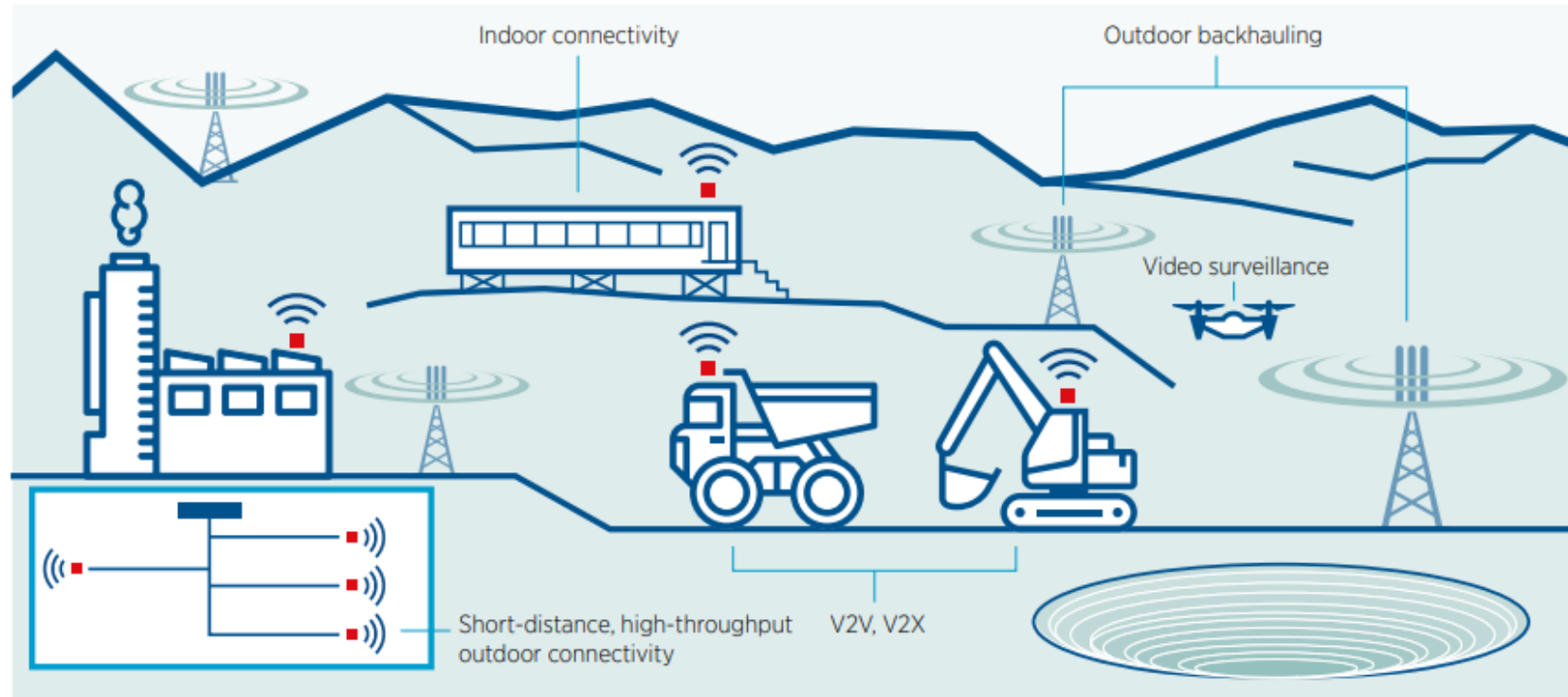
ESTIMATED IMPACT ATTRIBUTABLE TO MMWAVE SPECTRUM ON GDP AND TAX REVENUE



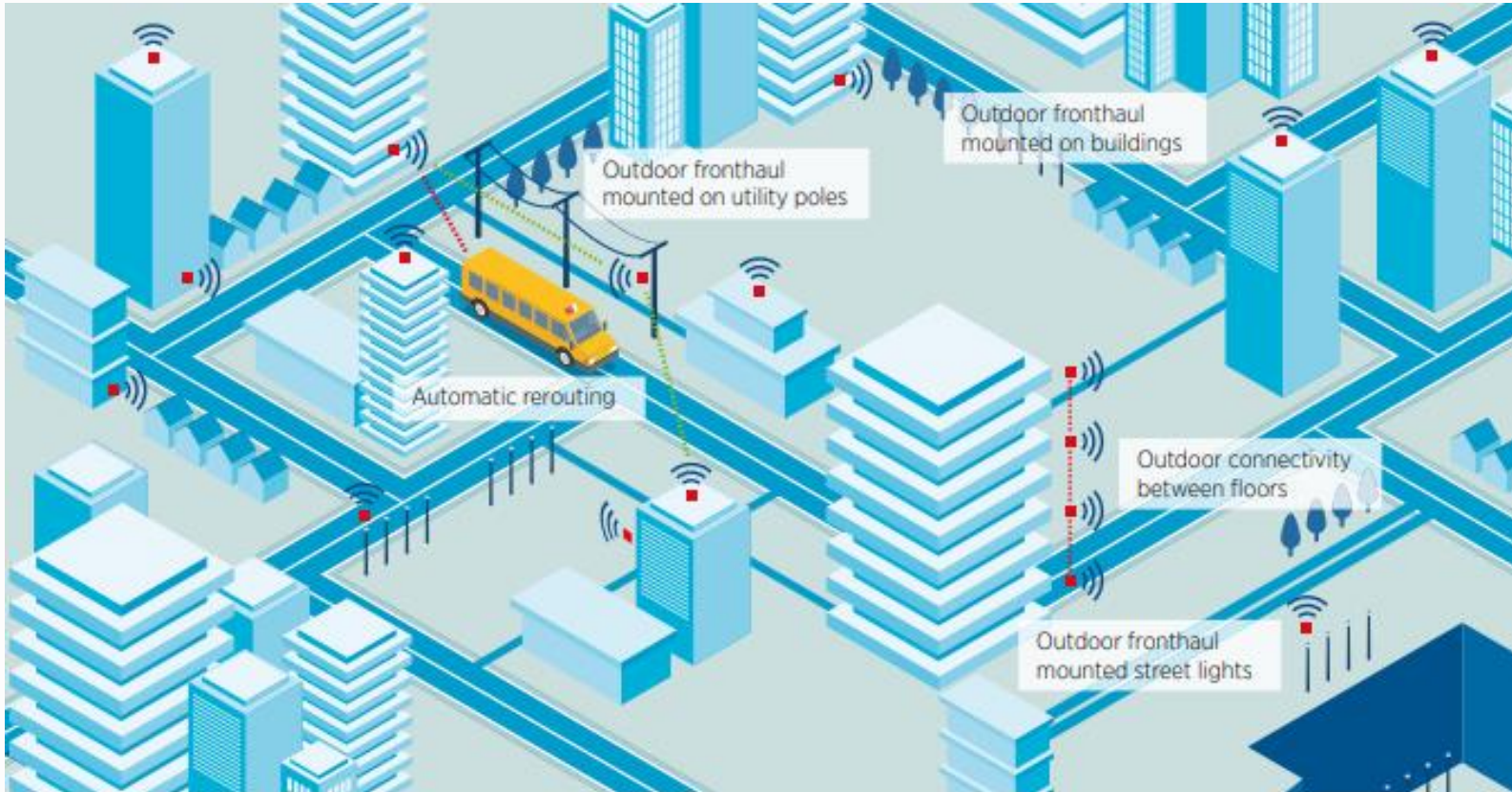
Source: TMG.



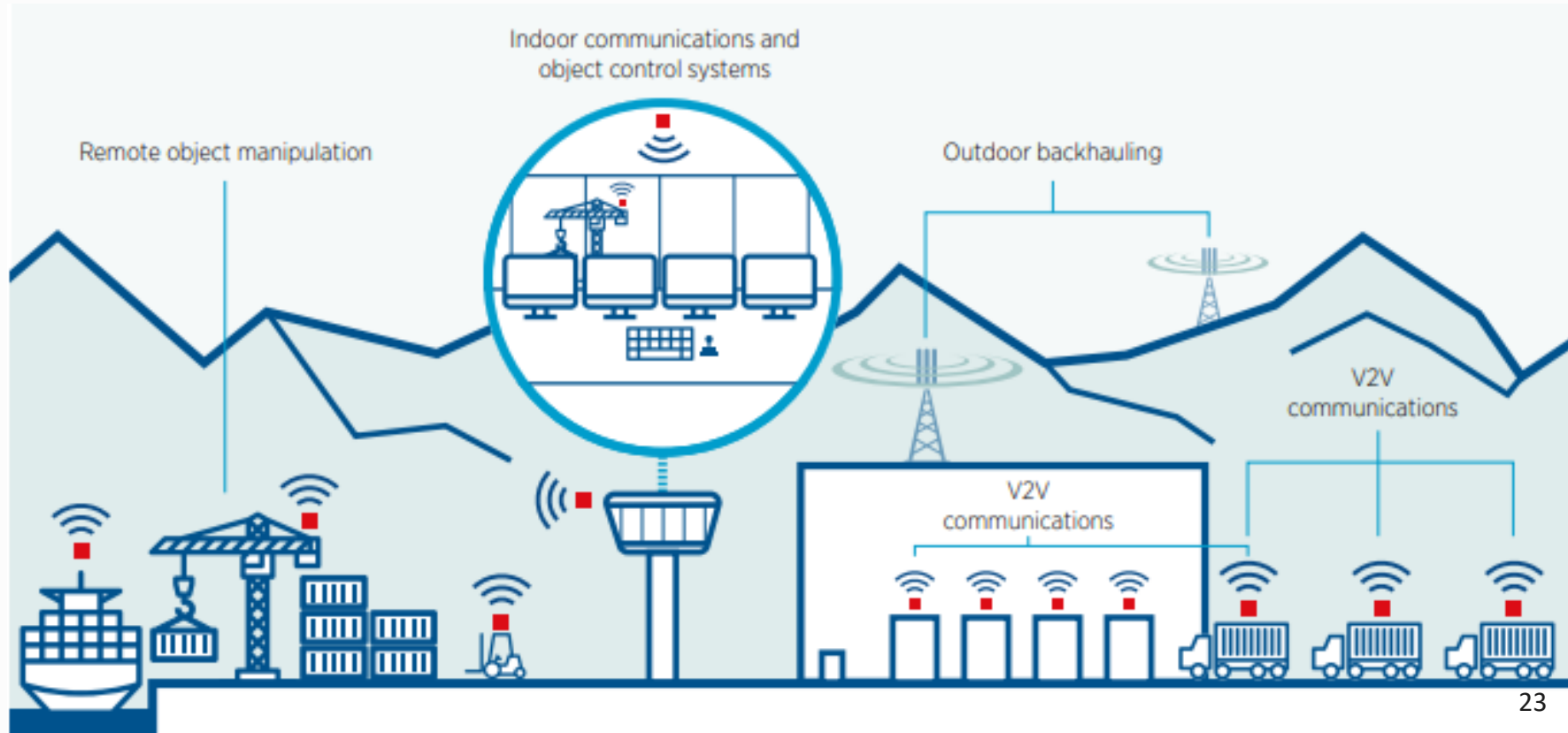
Case Study: Extractive Industries



Case Study: Connectivity



Case Study: Smart transportation logistics hubs





Geraldo Neto

geraldo@tmgtelecom.com

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Conclusion

Mohamed Abbas





Our Asks

26 GHz

(24.25-27.5 GHz)

- Limits to protect EESS (passive)
-28 to -32 dB(W/200MHz)
- No conditions necessary for FSS/ISS since sharing studies show significant protection margin

40 GHz

(37-43.5 GHz)

- Identification of whole range provides harmonisation with other Regions
- FSS downlink: ES sharing is a national issue
- FSS uplink: sharing studies show a significant protection margin

50 GHz

(45.5-52.6 GHz)

- Good options to support future 5G growth
- Studies have been performed and show sharing is possible

66 GHz

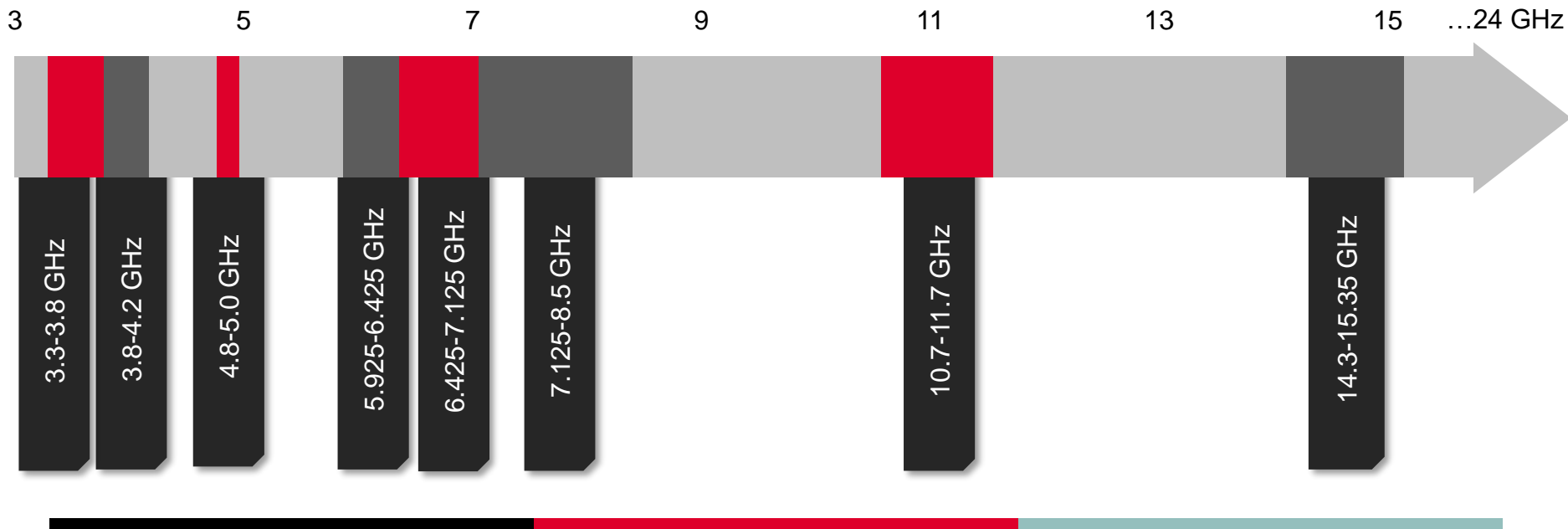
(66-71 GHz)

- Flexible use for unlicensed 5G systems - both IMT and non-IMT technologies
- Shared with WiGig
- Supported by APT, ATU, ASMG, CEPT



WRC-23 supported bands

GSMA supports WRC-23 AIs for IMT in 470-960 MHz, and consideration of the bands below





Experiences at the GSMA stand

Live 5G demos



City of the Future VR
experience



Interactive library - all
reports straight to your
inbox

